

Maze Solver

- Time limit: 1 second
- Memory limit: 256 MB

Labyrinth garden is a path or a set of different paths that usually start from the same origin and end at a single destination. Maze puzzle is a type of game where you have to find the right path. These puzzles have various models.

The puzzle given to this algorithm has the following features:

It has an origin and a destination. The origin is at the top of the puzzle and the destination is at the bottom of the puzzle. There may be obstacles in the paths that reduce the speed of reaching the destination. The path from origin to destination may not be unique. Some paths may end in a dead end. An intelligent agent is designed that can solve the given maze puzzle. **Graph traversal** algorithms as well as **B Tree** are used to design this agent.

Input:

The first line of the input contains two natural numbers m and n ($1000 \leq m, n$) separated by a space. Each m of the next line contains n natural numbers separated by a space and positive numbers representing are the path and the difficulty level of that path, and 0 represents the wall, in other words, m are the input lines of the maze puzzle matrix.

Output:

In the output, after calculating the route, replace its corresponding entries in the input matrix with the number -1 and print the resulting matrix. In other words, the output consists of m lines, each line containing n numbers separated by spaces.

Input Example:

8 10

0	0	0	1	0	0	0	0	0	0
0	1	1	1	0	1	1	0	1	0
0	1	0	1	0	0	1	1	1	0
0	0	0	1	1	1	1	0	0	0
0	1	1	1	0	0	1	1	1	0
0	1	0	0	0	1	1	0	0	0
0	1	0	1	1	0	1	1	1	0
0	0	0	0	0	0	0	1	0	0

Output Example:

0	0	0	-1	0	0	0	0	0	0
0	1	1	-1	0	1	1	0	1	0
0	1	0	-1	0	0	1	1	1	0
0	0	0	-1	-1	-1	-1	0	0	0
0	1	1	1	0	0	-1	1	1	0
0	1	0	0	0	1	-1	0	0	0
0	1	0	1	1	0	-1	-1	1	0
0	0	0	0	0	0	0	-1	0	0